PSG
Plastic Service Group

Operating Instructions

Hot Runner Controller and TEMPSoft2

profiTEMP

having your hot runner under control

CE

Rev. 1.00.04
01/2014
Translation of original
operating instructions

1 Introduction **2**
1.1 Typographical Conventions 2
1.2 Additional and continuative documents 3

2 Applications **4**

3 Security References **5**
3.1 Security References for User 5
3.1.1 Intended use 6
3.1.2 Maintenance 6
3.2 Warranty Conditions 6
3.3 Transport and Storage 7
3.3.1 Transport 7
3.3.2 Storage 7

4 Setup profiTEMP with TEMPSoft2 **8**
4.1 Scope of supply 8

5 Installation **9**
5.1 Installation References 9
5.2 Electrical Connection 9
5.2.1 Power Supply 9
5.2.2 Control fuse 9
5.2.3 Sensor inputs and power outputs (Plug XA) 10
5.2.4 Alarm Output (Signal Plug XM1) 10
5.2.5 Digital in- / - outputs 11
5.2.6 Interfaces 12

6 Immediately after the switch-on with existing Display Unit pT-DU **14**

7 Connection profiTEMP / TEMP-Touch XPC15 V **15**
7.1 Tool Coding 15

8 Appendix **16**
8.1 Consumable and Spare Parts 16
8.2 Version History 17

1 Introduction

These operating instructions describe the interaction of hot runner controller profiTEMP and **TEMPSoft2** software.

Further information on **TEMPSoft2** software, configuration and adjustment over parameters of the hot runner controller, etc., can be found in the specific operating manuals.

1.1 Typographical Conventions

Symbols and conventions are used in this document for faster orientation for you.

Symbols

Caution	With this symbol, references and information are displayed which are decisive for the operation of the device. In case of non-compliance with or inaccurate compliance there can result damage to the device or injuries to persons.
Note	The symbol refers to additional information and declarations, which serve for improved understanding.
Example	With the symbol, a function is explained by means of an example.
Reference	With this symbol, information in another document is referred to.
FAQ	Here FAQ (Frequently Asked Questions) are answered.
↗	Cross references are marked with the character f. In the pdf version of the document the objective of the cross reference is reached via the link.
`Equations`	Calculation specifications and examples are represented in this way.
<View>	Menu points (e.g. view) are represented in this way.
|Project|	Windows (e.g. project) are represented in this way.
n.a.	Not applicable, not existing

1.2 Additional and continuative documents

Parameters	Information on this topic are in the parameter description of the appropriate hot runner controller. **Temperature Control System flexotemp® Parameter** **Hot runner controllers profiTEMP Parameters**
Operation	Information on this topic are in the operating instructions **TEMPSoft2**.
Protocol PSG II	Information on this topic are in the protocol description **PSG II** and the corresponding object lists.
Protocol PSG II Ethernet	Information on this topic are in the protocol description **PSG II Ethernet** and the corresponding object lists.
Protocol Modbus	Information on this topic are in the protocol description **Modbus** and the corresponding object lists.
Protocol Modbus/TCP	Information on this topic are in the protocol description **Modbus/TCP** and the corresponding object lists.
Protocol CANopen	Information on this topic are in the protocol description **CANopen** and the corresponding object lists.
Data sheets and operating manuals	Available by Internet see www.psg-online.de

2 Applications

The hot runner controller profiTEMP controls hot runner nozzles as well as manifolds for particular plastics in an optimal adapted temperature range.

profiTEMP has a uniform and clear build- and operating concept from the smallest desktop with 6 zones up to the biggest tower with 250 zones.

On a 15“ touch screen (TEMP-Touch XPC15 V mounted on housing or stand-alone) the operating software **TEMPSoft2** is running. profiTEMP can additionally be equipped with a control panel DU.

In this document

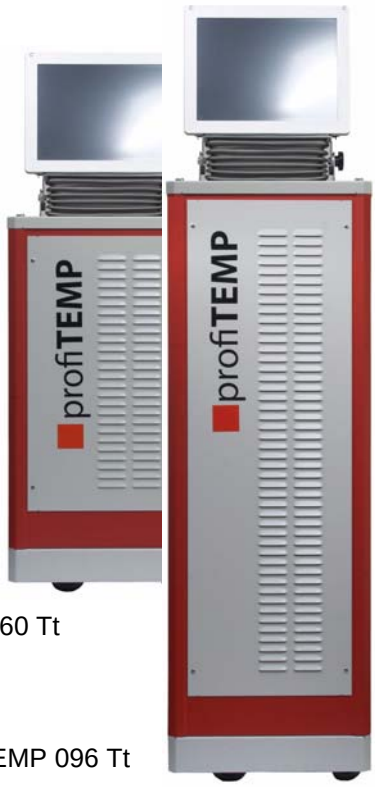
Hot runner controller profi-TEMP
with TEMPSoft2

are described.

Tower
profiTEMP 060 Te
with external
TEMP-Touch XPC15 V

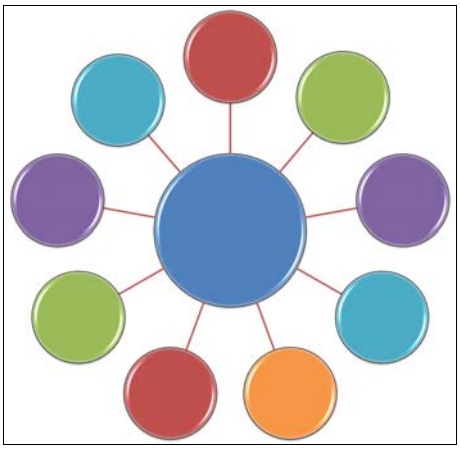
Mounted TEMP-Touch XPC15 V

Desktop
profiTEMP 036 Dt



Tower
profiTEMP 060 Tt

Tower
profiTEMP 096 Tt



The operating software **TEMPSoft2** offers among other things

- a tool management as a central control element
- View modes: Single-loop zone view, bar chart, graph writer, tool view
- User Administration
- Grouping of zones
- Language switching
- Online help

(see operating instructions **TEMPSoft2** chapter ↗Tool coding)

3 Security References

Before installation, handling or operation of the device, please read through this operating instructions completely and carefully.

3.1 Security References for User

All persons, responsible for the mounting/start-up/operation/maintenance/servicing of the device, have to

- be skilled appropriately
- consider this operating instructions exactly
- regard this operating instructions as part of the product
- maintain the operating instructions during lifetime of the product
- pass the operating instructions to all successive owners or operators of the product
- make sure, that every obtained amendment is integrated in the instructions

Please note the following safety instructions necessarily for protection against electric shock, risks of injuries and fire.

Before start-up, adhere strictly to the local safety regulations as well as the safety instruction.

Consider the regulations for prevention of industrial accidents for electrical installations and equipment by government safety organization in industrial facilities.

Do not throw packaging material careless away, thermoplastic foil/ styrofoam parts etc. may get dangerous for children.

Position the device exclusively on planes of stable and solid ground.

Protect device against moisture. Do not use in areas with high humidity.

Check, that the specified voltage on the type plate is identical with the mains voltage on-site.

Before each use check device, power supply cord and connector.

Ensure that the power cord and the connecting cables are not damaged by overrun, squeezing, tearing or suchlike. Protect the cords/cables against oil, sharp edges and temperatures above 70 °C.

Do not touch the mains plug with wet hands.

Lock the connected counter plug on the rear side of the device with retaining brackets against accidental removal.

Connect the connecting cable only in switched-off status.
Place the connecting cable to prevent stumbling.

Assure yourself that the connected mold is linked to the protective conductor.

Do not place any tanks, filled with liquid, on the top of the device, otherwise a dangerous situation may emerge.

Keep the ventilation slots open. Do not insert any objects.

Maintenance and repair work may be carried out by authorized persons only. Only skilled and on the risks trained persons may use the device. The relevant accidental regulations as well as other general approved safety-relevant, occupational-medical norms have to be obeyed. Unauthorized modifications of the device exclude liability of the manufacturer for resultant damages.

Before opening of the device always switch-off the mains switch and unplug the mains plug or make sure that the device is de-energized. Protect against unintentional reclosing.

Parts of components or components may only be brought into operation, when they were implemented safe of contact before. During installation they have to be de-energized.

For person and property damages, resulting of not considering these operating instructions or not considering these safety instruction, warranty claim terminates. For consequential damage we assume no liability.
The safety instruction are on the right side panel/side door and/or on the covering acrylic glass of the line bars.

Note the safety instructions necessarily on the hot runner controller identified by this sign/label.

Warning

3.1.1 Intended use

The hot runner controllers are designed for temperature-dependent control of electric heaters. More specific descriptions are given in the operating instructions.
When properly used, the safety of the user and the device is guaranteed.
The device may only be used for this purpose. If used for other purposes, the manufacturer / supplier will not take any responsibility and warranty for damages and consequential damages.

3.1.2 Maintenance

No special maintenance of the hot runner controller is necessary. Maintain a clean surface of the operating unit. For cleaning use a damp cloth. Avoid the use of solvents, cleansers and abrasives.

3.2 Warranty Conditions

This product is subject to the legal warranty time periods for faults or deficiencies in manufacture.

Content of Warranty

If a malfunction relatively occurs through the manufacture, the supplier repairs or replaces the nonconforming product, according to their own discretion.
The following repairs do not fall under the warranty and are liable to costs:

- Malfunctions after the legal notice periods have expired.
- Malfunctions caused through operating error of the user (if the device is not operated as described in the manual).
- Malfunctions caused through other devices.
- Changes or damage to the device which do not originate from the manufacturer.

If you wish to use services within the framework of this warranty, please refer to the supplier.

3.3 Transport and Storage

3.3.1 Transport

The hot runner controller is packed fully-mounted in a robust carton, cushioned with foamed material. This assures sufficient protection in normal case.

To avoid damage, the hot runner controllers must be transported STANDING.

3.3.2 Storage

If you should not put the hot runner controller into operation immediately, store it protected against dirt and moisture. Permissible temperature -20…70°C, average permissible humidity < 75 % per year, no condensation.

4 Setup profiTEMP with TEMPSoft2

Before installation, handling or operation of the device, please read through this operating instructions completely and carefully.

4.1 Scope of supply

1 Hot Runner Controller

profiTEMP *** **Dt**	Desktop with mounted TEMP-Touch XPC15 V and/or
profiTEMP *** **De**	Desktop with external TEMP-Touch XPC15 V and/or
profiTEMP *** Tt	Desktop with mounted TEMP-Touch XPC15 V and/or
profiTEMP *** Te	Tower with external TEMP-Touch XPC15 V

(equipment implementation dependent on number of zones ***)

PSG Product catalog control systems	CD-ROM
Operating instructions	Printout
Specifications - Pin assignment	Printout
Wiring diagrams	Printout

Technical changes reserved

5 Installation

5.1 Installation References

Unpacking

The device is packed fully-mounted in a robust carton.
Check the packaging and then the device for identifiable damage incurred during transit. If damage is identified, then please get in touch with the transportation company.

In the case of damage the device may not be brought into operation.

Before beginning and during all installation/dismantling work, attention is to be paid that the system, as well as the devices, are de-energized

Only components of similar type may be exchanged. In case of replacement, it is absolutely necessary to adopt the setting adjustments of the replaced component.

5.2 Electrical Connection

The hot runner controller may be installed and put into operation by specialized staff only.
Before switch-on of the control zones it is to be ensured that the hot runner controller is configured for the application. An incorrect configuration can lead to damage to the control section or to injuries to persons.

5.2.1 Power Supply

The hot runner controller is activated/deactivated by the main switch.

Consider connected load.
Check the power supply under the terms of the wiring diagram

5.2.2 Control fuse

To protect the internal 24 VDC power supply for the electronics.

5.2.3 Sensor inputs and power outputs (Plug XA)

Connect the thermocouples TC of type J, L, K to the sensor inputs and heaters to the control outputs of the connection of hot runner mold.

Consider terminal assignment (see specifications).

Output power	Max. 3.6 kW
Rated voltage	230 VAC (ohmic load)

5.2.4 Alarm Output (Signal Plug XM1)

The alarm output for the signal for enabling of machine/alarm message is implemented as

- potential-free relay contact (output 1 relay)
- 4 pole HTS output plug type Wieland 3 pole & PE with counter plug

XM1	**Signal plug**
HTS Plug	
Pin	**Function and/or signal**
1	
2	
3	n.a.
4	⏚

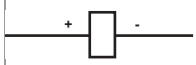
Rated output current	1 A
Rated voltage	250 VAC (ohmic load)

5.2.5 Digital in- / - outputs

Digital input (24 VDC), digital output (24 VDC / 500 mA)

XM3 DIO	**4 Digital In- /3 Digital Outputs**	
D-SUB, socket		
Pin		**Function and/or signal**
1	I1	Digital input 1
2	I3	Digital input 3
3	0V	Reference potential I *
4	O3	Digital output 3
5	I4	Digital input 4
6	I2	Digital input 2
7	O1	Digital output 1
8	+U	Power supply output O*
9	O2	Digital output 2

Digital input	XM3 Pin 1/2/5/6	I*		External auxiliary voltage +24 VDC
	XM3 PIN 3	0V		External auxiliary voltage 0 VDC

Digital output	XM3 PIN 8	+U		External auxiliary voltage +24 VDC
	XM3 PIN 4/7/9	O*		External auxiliary voltage 0 VDC

Output 1 Relay see chapter ↗Alarm Output (Signal Plug XM1).

5.2.6 Interfaces

XS1 RS485	**Serial interface COM**	
D-SUB, socket		
Pin		**Function and/or signal**
1	TX+	RS422
2	TX-	RS422
3	TXD	
4	n.a.	
5	RX-	RS422
6	RX+	RS422
7	n.a.	
8	RXD	
9	0V	RS422

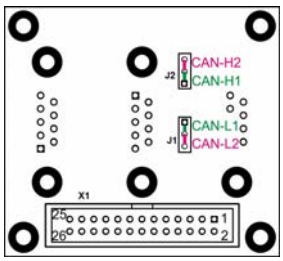
XS2 CAN	**Interface CANopen**		
D-SUB, socket			
Pin		**Function and/or signal**	
1	n.a.		
2	CAN-L	CAN 2	CAN 1
3	n.a.		
4	n.a.		
5	n.a.		
6	n.a.		
7	CAN-H	CAN 2	CAN 1
8	n.a.		
9	n.a.		

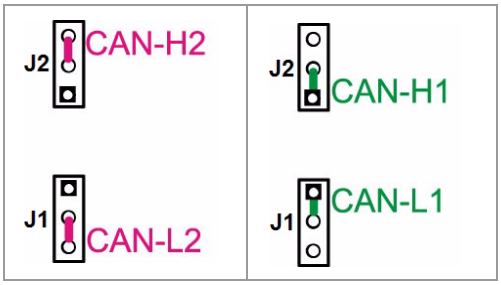
Default setting

Before opening the housing, deenergize the device and protect it against unintentional reclosing.

Warning

External CAN-Bus e.g. for hot runner controller overall functions	**Internal** CAN-Bus e.g. when using the external reference junction





XS3 RJ45	**Interface Ethernet**
RJ45, Socket	

XS4 USB	**Interface USB**

6 Immediately after the switch-on with existing Display Unit pT-DU

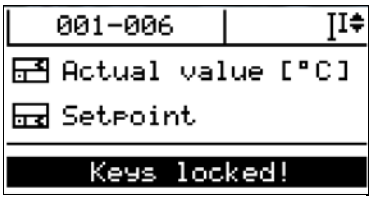
Is profiTEMP equipped with a Display Unit pT-DU (LED and LCD display), immediately after switch ON, all segments of the LED display are light. That identifies that all LED displays are intact.

In the LCD display is the logo shown.

The first switch-on after leaving the factory asks for the language to use in the LCD display (from HEX file version pT-DC xxx3711z).

Check hardware!
(with progress bar)

After a successful end of the hardware check, the LCD display changes to base display.



The keys of the LCD display are locked (see operating instructions **TEMPSoft2** chapter ↗Setting Program settings ↗Input block hot runner controller), as soon as **TEMPSoft2** connects to profiTEMP. profiTEMP is completely controlled by **TEMPSoft2**. The alarm LED's, the LED display and the LED's in the function keys respond to the operation by **TEMPSoft2**, when Display Unit pt-DU is available.

The look of the operator interface **TEMPSoft2** is described in operating instructions **TEMPSoft2** chapter ↗Operation by TEMPSoft2 - general specification.

7 Connection profiTEMP / TEMP-Touch XPC15 V

Lower side TEMP-Touch XPC15 V

Ethernet connection internal

profiTEMP *** Tower - Connection between Ethernet RJ45 on Display Unit pT-CU and Switch; Connection between Switch and **[A]** on TEMP-Touch XPC15 V.

profiTEMP *** Desktop - Connection between Ethernet RJ45 on Display Unit pT-DU and **[A]** on TEMP-Touch XPC15 V.

Power Supply

The power supply 24 VDC on TEMP-Touch XPC15 V **[C]** is connected to the 24 VDC power supply of the internal profiTEMP power unit.

Ethernet connection external

Connection **[D]** on TEMP-Touch XPC15 V for right side Ethernet connection under cover cap.

USB connection external

Connection **[B]** on TEMP-Touch XPC15 V for left side USB connection under cover cap, e.g. for **TEMPSoft2** update.

7.1 Tool Coding

The tool coding is implemented at the moment by 4 bits by the digital in- /outputs XM3 Pin, 1, 2, 5, 6, 8.

8 Appendix

8.1 Consumable and Spare Parts

Order number	Article description	
Display Unit		
025 400-06	pT-DU 06	profiTEMP Display Unit 6 Zones
025 400-12	pT-DU 12	profiTEMP Display Unit 12 Zones
025 400-18	pT-DU 18	profiTEMP Display Unit 18 Zones
025 400-24	pT-DU 24	profiTEMP Display Unit 24 Zones
025 400-30	pT-DU 30	profiTEMP Display Unit 30 Zones
025 400-36	pT-DU 36	profiTEMP Display Unit 36 Zones
Display Controller		
025 340-00	pT-DC-CU	profiTEMP Controller Unit (without Display)
Hot Runner Controller Card		
025 300-01	HCC06/16	profiTEMP Hot Runner Controller Card
Fuses		
030 612	Fuse	16 A FF [very fast acting] (6x32 mm)
162 651-02	Control fuse Desktop	3.15 A MT [medium time lag] (5x20 mm)
162 650-011	Control fuse Tower	4 A MT [medium time lag] (5x20mm)
Adapter		
025 350-01	pT-ADP-ETH	profiTEMP Adapter ETH
025 350-00	pT-ADP-COM	profiTEMP Adapter COM

For further information on consumable and spare parts please see the attached documentation, e.g. wiring diagrams, etc.

Technical changes reserved

8.2 Version History

Version	Date	Changes
1.00.04	1/31/2014	In detail, the following amendments/corrections were made: ■ Connection pT/Touch D
1.00.03	11/30/2012	In detail, the following amendments/corrections were made: ■ Connections of touch permuted ■ Terminal marking pT-ADP-COM revised, XM3, XS1
1.00.02	11/30/2011	In detail, the following amendments/corrections were made: ■ CAN interface CAN1/CAN2 ■ XM1, XM3 specified
1.00.01	10/21/2011	In detail, the following amendments/corrections were made: ■ First switch-on
1.00.00	08/31/2011	Valid for software version **TEMPSoft2** 0.09.12 First edition
		PSG Plastic Service GmbH Pirnaer Strasse 12-16 68309 Mannheim Germany Tel. +49 621 7162 0 Fax +49 621 7162 162 www.psg-online.de info@psg-online.de